IV. On the Orbits of several ancient Comets. By J. R. Hind, Esq. of the Royal Observatory, Greenwich. Communicated by the Rev. R. Main.

The elements of the following comets are in this paper deduced from observations given by M. Edouard Biot, in the Appendix to the *Connaissance des Temps* for 1846, viz.: of the second comet of 568; of the comet of 574; and of the comet of 1385. In the cases of the first and second of these an ephemeris is computed from the elements which represent the observations with tolerable accuracy. The observations are found in a supplement to the catalogue of Ma-tuon-lin (translated by M. Biot). This supplement and Ma-tuon-lin's *Catalogue of Extraordinary Stars* contain many observations, not previously published, and the orbits of the above-mentioned comets are not found in any catalogue. From the nature of the Chinese observations the longitude of the nodes and inclinations of the orbits are subject to great uncertainty; indeed, none of the elements can be considered as better than rough approximations.

V. Approximate Elements of the Orbit of the Comet recently discovered by M. Faye. By Professor Henderson.

The comet discovered at Paris by M. Faye was observed at Edinburgh on December 2d.

At $9^h\ 58^m\ 6^s$ mean time, its right ascension was $5^h\ 20^m\ 20^s{\cdot}4$, and declination $+5^\circ\ 5'\ 13''$.

From the observations made at Paris on November 24, at Kensington on November 29, and at Edinburgh on December 2, the following approximate elements of the orbit have been deduced:—

Time of Perihelion Passage, Sept. 28·898 Greenwich mean time.

Perihelion Distance	2·5976
	° ′
Longitude of Perihelion	57 2
Longitude of Ascending Node	226 4
Inclination	22 14

Motion direct.

From the great distance of the comet, and slowness of its motion, small errors in the observations and quantities neglected in the computations have a considerable effect upon the elements. Those here given may indicate the place where the comet is to be found.

Of all the comets whose orbits have been determined, this has the greatest perihelion distance, except the one of 1729.

$$x = [9{\cdot}9833]\ r.\ \sin(v + 144^\circ\ 5')$$
$$y = [9{\cdot}9968]\ r.\ \sin(v + 52\ 44)$$
$$z = [9{\cdot}4784]\ r.\ \sin(v + 118\ 40)$$

VI. Two circular letters from Professor Schumacher on the Comet discovered by M. Faye. Communicated by F. Baily, Esq.

These circulars contain letters from M. Faye, announcing the

discovery and observations of the comet. The observed places are as follows, for Paris mean time :—

	h m s	R.A. =	Decl. =
1843, Nov. 22	14 44 11	81° 5′·0	+ 6° 56′ ..″
	15 28 54	81 4·5	6 58 ...
24	17 4 43	80 50·7	6 30 35

VII. Results of Observations made with a Sextant and Pocket Chronometer, for determining the Latitude and Longitude of the Apartments of the Society. By J. Hartnup, Esq. Communicated by Captain W. H. Smyth, R.N.

The observations from which the latitude and longitude were determined, were made with a 10-inch sextant mounted on a stand, and the altitudes were taken in an artificial horizon of mercury.

The resulting longitude is the mean of nine partial results, deduced from observations included between June 24, 1842, and May 4, 1843. The mean of these results gives $27^{s}\cdot38$ west of Greenwich, the extreme difference being $0^{s}\cdot82$. The first result was derived by observations made at Somerset House, and at Lord Wrottesley's Observatory, at Blackheath, with an assumed rate of the chronometers during the interval, the longitude of Lord Wrottesley's Observatory being assumed to be $2^{s}\cdot7$ east of Greenwich. For the second and third results, the difference of longitude between Somerset House and Mr. Bishop's Observatory, in the Regent's Park, was obtained, the longitude of Mr. Bishop's Observatory being assumed to be $37^{s}\cdot1$ west of Greenwich. The last six results were obtained by direct comparison with Greenwich, the Greenwich time being furnished by the Rev. R. Sheepshanks, through chronometers which had been compared by him with the transit clock at the Royal Observatory.

The altitudes of stars from which the latitude is derived were taken on the eastern end of the terrace, about 340 feet south of the apartments of the Society. Stars were observed south of the zenith to balance with *Polaris*, which was observed both on and at a distance from the meridian.

From six partial results, obtained between November 12, 1842, and January 4, 1843, the latitude of the east end of the terrace was found to be 51° 30′ 34″·9 north; the extreme difference being 3″·4. Whence the latitude of the apartments of the Society results 51° 30′ 38″·3 north.

Erratum in last Monthly Notice (*November* 10, 1843).

Page 10, Right Ascension of Mauvais's Comet, June 6, *for* 342° *read* 343°.

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